

REMARKS

Entry of the foregoing, and reconsideration and further examination of the subject application, in view of the amendments above and the remarks below, are respectfully requested.

Status of Claims

By the above amendments, the description has been amended to delete paragraph [0012.1], which was added in the last Amendment, and to correct misspellings in paragraph [0027] identified by the Examiner.

Additionally, independent claims 1, 22, 33, 52, 70, 85, and 100 have been amended to specify that the plasticizer is present in an amount of about 10-40 wt% and is capable of dissolving a 5-mil (.127 mm) thick film of the polyester to produce a clear solution at a temperature of 160°C or less. Support for the amendment may be found in original dependent claims 3-4, 35-36, 54-55, 73-74, 87-88, and 102-103, the original description such as in paragraphs [0026], [0029], and [0043]. Claims 1, 22, 33, 52, and 100 have also been amended to delete the language regarding solubility value of 4 or greater.

Claims 3-4, 35-36, 54-55, 73-74, 87-88, and 102-103 have been canceled without prejudice or disclaimer.

Conforming amendments have been made to dependent claims 5, 37, 56, 75, 89, and 104.

Claims 10, 12, 41-42, 59-60, 77-78, 91-92, and 106-107 have been amended to clarify the composition of the polyester. Support for the amendment may be found in the description such as paragraphs [0011] and [0019].

Finally, claims 38, 57, 76, 90, and 105 have been amended to remove recitation of trimellitic acid and citric acid.

No claims have been added. Thus, upon entry of the foregoing amendments, claims 1-2, 5-34, 37-53, 56-72, 75-86, 89-101, and 104-113 will remain pending in the application. Each of these claims is under consideration.

Specification Objections

In the Office Action, the disclosure was objected to because 2,2,4-trimethyl-1,3-pentenediol diisobutyrate and Texanol diisobutyrate are shown as having different solubilities even though they are alleged to be "identical." Applicants have check their records on this point, and report that the two are not identical. 2,2,4-trimethyl-1,3-pentenediol diisobutyrate, as tested, was analytical grade or a pure compound. Texanol diisobutyrate, on the other hand, is a commercial product that is said to have a purity of at least 98.6% and contains a mixture of dibutyrate isomers.

The disclosure was also objected to because "ricinoleate" is misspelled. The misspelling has been corrected by the above amendments.

Claim Rejections - 35 U.S.C. § 112

Claims 1-113 were rejected under 35 U.S.C. § 112, first paragraph, for lack of written description and enablement based the language "wherein the plasticizer has a solubility value of 4 or greater at a temperature of 160°C or less." Applicants disagree with the propriety of the rejections, but in an effort to expedite prosecution, Applicants have deleted the language. Accordingly, the rejections are now moot and should be withdrawn.

Claims 6, 10-14, 38, 41-42, 57, 59-60, 76-78, 90-92, and 105-107 were rejected under § 112, second paragraph, for allegedly being indefinite. Applicants have amended these claims to address the Examiner's observations. Accordingly, the rejection is now moot and should also be withdrawn.

Double Patenting

Claims 1-113 were provisionally rejected under the judicially created doctrine of obviousness-type double patenting as allegedly being unpatentable over claims 1-33 of copending Application No. 10/722,870. Since this is a provisional rejection, Applicants request that it be held in abeyance until an indication of allowability of the present claims.

Claim Rejection - 35 U.S.C. § 103

Claims 1-113 were rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,068,910 to Flynn et al. ("Flynn") in view U.S. Patent No. 4,356,282 to Largman ("Largman"); U.S. Patent No. 4,558,085 to Lee ("Lee"); U.S. Patent No. 4,524,191 to Nakamura et al. ("Nakamura"); U.S. Patent 5,534,570 to Shih et al. ("Shih"); U.S. Patent No. 5,750,605 to Blumenthal et al. ("Blumenthal") or JP-4-117432 ("JP '432"); and U.S. Patent 6,538,054 to Klatt et al. ("Klatt") or JP-2002-53740 ("JP '740"); and U.S. Patent 5,998,005 to Kanno ("Kanno") or JP 2000-186191 ("JP '191"). Applicants respectfully traverse the rejection and the statements made in support thereof.

Flynn

Flynn does not disclose or suggest each feature of the present invention, as set forth in representative claim 1. For example, Flynn does not disclose or suggest using from 10-40 wt% of a plasticizer that is capable of dissolving a 5-mil (.127 mm) thick film of the polyester to produce a clear solution at a temperature of 160°C or less. Flynn mentions that its composition can have a wide range of additives, including plasticizers. Col. 4, ll. 60-65. But Flynn does not disclose or suggest any particular kind or amount of plasticizer, much less one that has the recited solubility parameter.

The secondary references applied by the Examiner do not remedy the deficiencies of Flynn, because they cannot be properly combined with Flynn or their combination would not have led persons skilled in the art to arrive at the claimed invention, or both.

Largman

Largman cannot be properly combined with Flynn for at least three reasons. First, there is no suggestion or motivation to use the plasticizers of Largman with the Flynn polyesters. The plasticizers of Largman are for a different kind of polyester than that used in Flynn. Largman discloses that its polyester can contain up to 5% of other comonomers. Largman at col. 5, ll. 16-19. On the other hand, Flynn demonstrates that a polyester with less than 5% of another comonomer cannot be calendered because the

polyester crystallizes in the calender rolls. Compare Example 2 (31 mole% CHDM) with Example 3 (3.5 mole% CHDM) in Flynn. Since Largman and Flynn employ different kinds of polyesters, there is no suggestion or motivation to use the plasticizers of one in the other.

Second, Largman teaches away from using its plasticizers in the Flynn composition. Largman discloses that “[t]he plasticizer allows crystallization of amorphous areas of the polyester to continue at lower temperatures than if a plasticizer is not used.” Largman at col. 6, ll. 6-8 (emphasis added). In contrast to Largman, Flynn prefers using amorphous polyesters. Flynn at col. 3, l. 11. Indeed, Flynn teaches that “[a]n especially useful technique [for obtaining such a polyester] is to blend amorphous or very slow crystallizing polyester with the base polyester.” Flynn at col. 3, ll. 15-17 (emphasis added). Flynn also teaches that crystallization can prevent calenderability. See Example 3 in Table 2 of Flynn. Since Largman discloses that its plasticizers induce crystallization at lower temperatures, while Flynn seeks to avoid crystallization, Largman teaches away from using its plasticizers in the Flynn polyester composition.

Third, there is no reasonable expectation of success in using Largman’s plasticizers in the Flynn composition. Since Largman and Flynn use different kinds of polyesters, and since Largman discloses that its plasticizers induce crystallization, while Flynn seeks to avoid crystallization, persons skilled in the art would not have had a reasonable expectation of success in combining the Largman plasticizers in the Flynn composition.

Thus, Largman cannot be properly combined with Flynn.

Lee

Lee cannot be properly combined with Flynn for at least two reasons. First, there is no suggestion or motivation to use the plasticizers of Lee with the Flynn polyesters. The plasticizers of Lee are for a different kind of polyester than that used in Flynn. Lee discloses that its polyester is “fast crystallizing.” Lee at col. 1, ll. 14-15 (emphasis added). The polyester can contain up to 5% of other comonomers. Col. 3, ll. 17-32. Indeed, Lee teaches that “large amounts of a comonomer normally will

depress...crystallization rate of the [polyester] and, therefore, large amounts of such comonomers are best avoided." Col. 3, ll. 32-36 (emphasis added).

On the other hand, Flynn prefers using amorphous polyesters. Flynn at col. 3, l. 11. Indeed, Flynn teaches that "[a]n especially useful technique [for obtaining such a polyester] is to blend amorphous or very slow crystallizing polyester with the base polyester." Col. 3, ll. 15-17 (emphasis added). Flynn also teaches that crystallization can prevent calenderability. See Example 3 in Table 2 of Flynn. Flynn demonstrates that a polyester with less than 5% of another comonomer cannot be calendered because the polyester crystallizes in the calender rolls. Compare Example 2 (31 mole% CHDM) with Example 3 (3.5 mole% CHDM) in Flynn. Since Lee and Flynn employ different kinds of polyesters, there is no suggestion or motivation to use the plasticizers of one in the other.

Second, there is no reasonable expectation of success in using Lee's plasticizers in the Flynn composition. Since Lee and Flynn use different kinds of polyesters, persons skilled in the art would not have had a reasonable expectation of success in combining the Lee plasticizers in the Flynn composition.

Even if Lee can properly be combined with Flynn, the combination would still not have led persons skilled in the art to arrive at the claimed invention. Lee only teaches using from about 0.5 to about 3 wt% of the plasticizer. Col. 7, ll. 28-30. This is orders of magnitude below the 10-40 wt% recited in the present claims.

Thus, Lee cannot be properly combined with Flynn, and even if it can, the combination would still not have led persons skilled in the art to arrive at the claimed invention.

Nakamura

Nakamura cannot be properly combined with Flynn for at least two reasons. First, there is no suggestion or motivation to combine their teachings. Nakamura discloses that its composition undergoes "rapid crystallization." Col. 6, ll. 18-20 (emphasis added).

On the other hand, Flynn prefers using amorphous polyesters. Col. 3, l. 11. Indeed, Flynn teaches that "[a]n especially useful technique [for obtaining such a

polyester] is to blend amorphous or very slow crystallizing polyester with the base polyester.” Col. 3, ll. 15-17 (emphasis added). Flynn also teaches that crystallization can prevent calenderability. See Example 3 in Table 2 of Flynn. Since Nakamura and Flynn employ different kinds of polyesters, there is no suggestion or motivation to combine their respective teachings.

Second, there is no reasonable expectation of success in using Nakamura’s plasticizers in the Flynn composition. Since Nakamura and Flynn use different kinds of polyesters, persons skilled in the art would not have had a reasonable expectation of success in combining the Nakamura plasticizers in the Flynn composition.

Thus, Nakamura cannot be properly combined with Flynn.

Shih

Even if Shih can properly be combined with Flynn, the combination would still not have led persons skilled in the art to arrive at the claimed invention. Shih discloses that it was “unexpectedly determined that the on-set shrink temperature and the shrink rate of a heat-shrinkable film or sheet...can be decreased by melt blending a critical amount of a plasticizer....” Col 1, ll. 60-64. That critical amount is 1 to 10 wt% of the plasticizer. Col. 2, l. 37.

In contrast to Shih, the present claims call for a higher amount of plasticizer, from about 10-40 wt%. Thus, even if the combination of Shih and Flynn were proper, the combination would still not have led persons skilled in the art to arrive at the claimed invention.

Moreover, it should be noted that while Shih discloses the use of a plasticizer, Shih does not distinguish between plasticizers that can solubilize the polyester versus those that can’t. In fact, Shih discloses using epoxy compounds as the plasticizer. See Shih at col. 3, lines 63-65. However, as shown in Table 1 on page 13 of the present application, epoxy derivatives such as epoxidized linseed oil cannot dissolve a 5-mil film of the polyester to produce a clear solution at temperatures of 160°C or below.

In this regard, Applicants note the Examiner’s assertion in the Office Action that “[o]ne of ordinary skill in the art, at the time the invention was made, would select the ones, which have the highest solvating power from a list of equivalents.” *Office Action*

at 6. However, there is no disclosure in Shih that “solvating power” is an important or even desirable attribute in the selection of plasticizers. Absent such a teaching, persons skilled in the art would not have been motivated to select plasticizers with “the highest solvating power” based on the combination of Shih and Flynn.

Therefore, even if Shih can properly be combined with Flynn, the combination would still not have led persons skilled in the art to arrive at the claimed invention.

Blumenthal

Blumenthal cannot be properly combined with Flynn for at least two reasons. First, there is no suggestion or motivation to use the plasticizers of Blumenthal with the Flynn polyesters. The plasticizers of Blumenthal are for a different kind of polyester than that used in Flynn. Blumenthal discloses that its polyester is sulfonated and are used in a hot melt adhesive composition. Col. 2, ll. 37-39.

On the other hand, Flynn's polyesters are not sulfonated. Col. 3, ll. 30-60. Moreover, Flynn teaches that excessive sticking to the calender rolls can prevent calendering. See Examples 1, 4, and 7 in Table 2 of Flynn. Indeed, Flynn requires an additive for preventing sticking. Col. 3, ll. 41-42. Since Blumenthal and Flynn employ different kinds of polyesters, there is no suggestion or motivation to use the plasticizers of one in the other.

Second, there is no reasonable expectation of success in using Blumenthal's plasticizers in the Flynn composition. Since Blumenthal and Flynn use different kinds of polyesters, persons skilled in the art would not have had a reasonable expectation of success in combining the Blumenthal plasticizers in the Flynn composition.

JP '432

Even if JP '432 can properly be combined with Flynn, the combination would not have necessarily led persons skilled in the art to arrive at the claimed invention. While JP '432 discloses the use of a plasticizer, JP '432 does not distinguish between plasticizers that can solubilize the polyester versus those that can't. In fact, JP '432 discloses a number species that can't, such as epoxy plasticizers, citrate ester plasticizers, and trimellitate ester plasticizers. See page 5 of English translation.

Like in Shih, there is no disclosure in JP '432 that "solvating power" is an important or even desirable attribute in the selection of plasticizers. Absent such a teaching, persons skilled in the art would not have been motivated to select plasticizers with "the highest solvating power" based on the combination of JP '432 and Flynn.

Therefore, even if JP '432 can properly be combined with Flynn, the combination would still not have necessarily led persons skilled in the art to arrive at the claimed invention.

Klatt

Even if Klatt can properly be combined with Flynn, the combination would not have necessarily led persons skilled in the art to arrive at the claimed invention. While Klatt discloses the use of a plasticizer, Klatt does not distinguish between plasticizers that can solubilize the polyester versus those that can't. For example, Klatt discloses dioctyl phthalate as a plasticizer. Col. 12, ll. 53-55. However, as shown in Table 1 on page 15 of the present application, dioctyl phthalate cannot dissolve a 5-mil film of the polyester to produce a clear solution at temperatures of 160°C or below.

Like in Shih and JP '432, there is no disclosure in Klatt that "solvating power" is an important or even desirable attribute in the selection of plasticizers. Absent such a teaching, persons skilled in the art would not have been motivated to select plasticizers with "the highest solvating power" based on the combination of Klatt and Flynn.

Moreover, Klatt is silent on the amount of plasticizer.

Therefore, even if Klatt can properly be combined with Flynn, the combination would still not have necessarily led persons skilled in the art to arrive at the claimed invention.

JP '740, Kanno, and JP '191

None of the remaining secondary references remedies the deficiencies of Flynn mentioned above. None of these documents discloses the use of plasticizers, much less one that has the recited solubility parameter.

Thus, even if these secondary references can properly be combined with Flynn, the combination would still not have led persons skilled in the art to arrive at the claimed invention.

Accordingly, for the reasons mentioned above, there is no *prima facie* case of obviousness, and the rejection should be withdrawn.

Conclusion

In summary, Applicants believes the application to be in condition for allowance. Accordingly, the Examiner is respectfully requested to reconsider the rejection(s), enter the above amendment, remove all rejections, and pass the application to issuance.

Respectfully submitted,

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